

The background of the slide is a dark, atmospheric photograph of a room. The walls are covered in a grid of small, glowing rectangular signs, each containing a word or short phrase in a light blue or green font. The words are arranged in a regular pattern, creating a sense of data or information. In the foreground, the silhouettes of two people are visible against the glowing wall. One person is on the left, facing right, and the other is on the right, facing left. The overall mood is mysterious and intellectual.

Champion Provider Fellowship: Data Storytelling Workshop

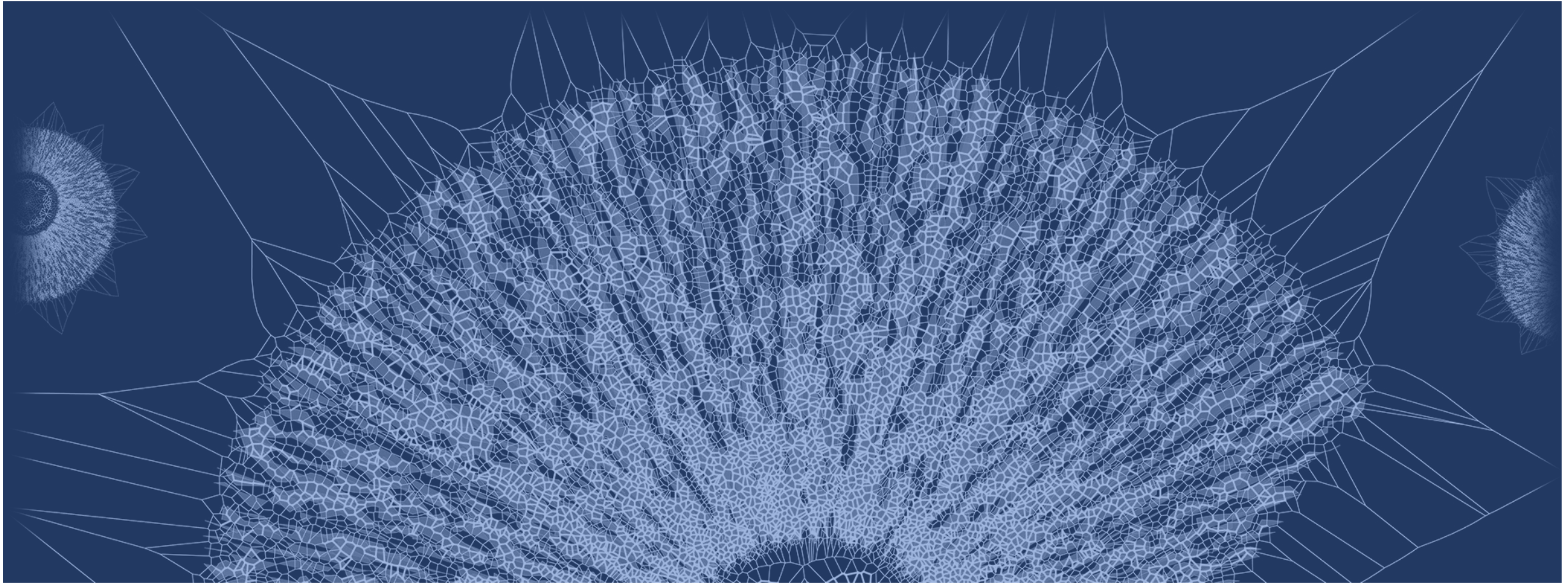
June 12, 2025



HILLCREST
ADVISORY

Agenda

- Lessons learned in communicating with data (30 minutes)
- Data Storytelling Tools (10 minutes)
- Roll-up-Your-Sleeves Exercise to Practice Data Storytelling (45 minutes)



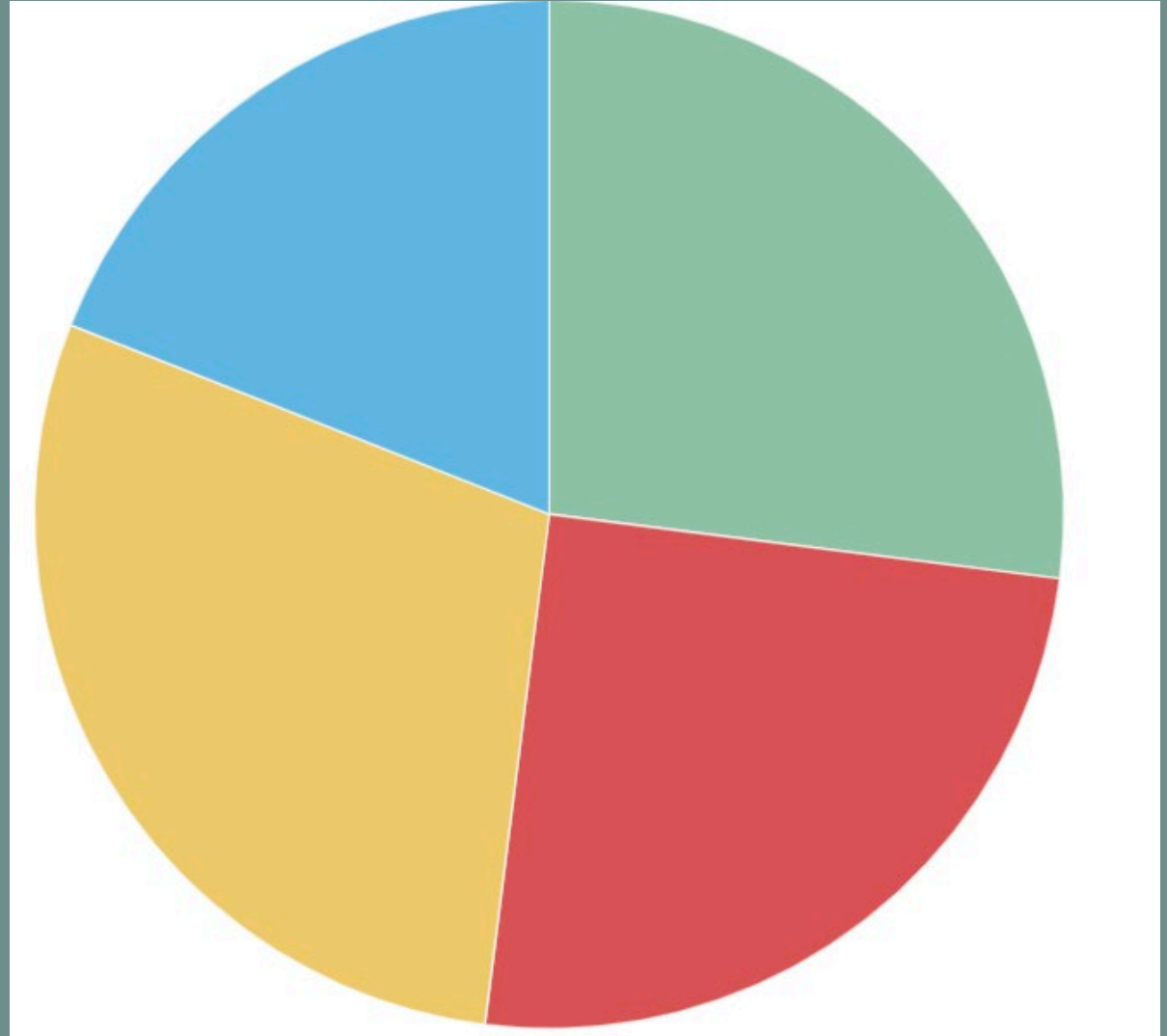
Lessons Learned: Building Visualizations



Lesson # 1
The type of chart you choose
matters greatly.

For example, be careful with the pie graph...

It can be hard to distinguish between “slices” of a pie chart.



Lesson # 1

It's easier for us to interpret the same information as bars.

Helpful Links:

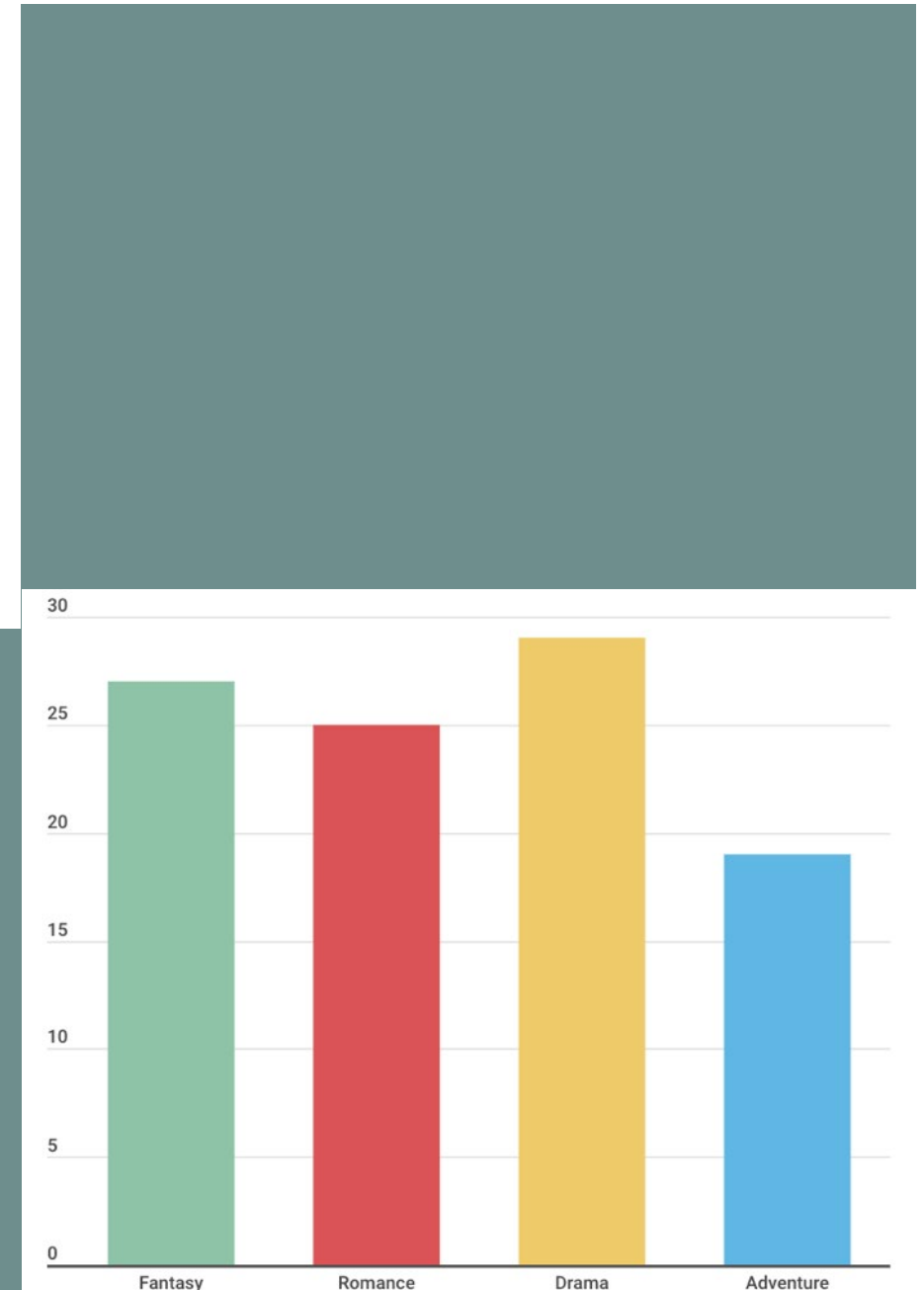
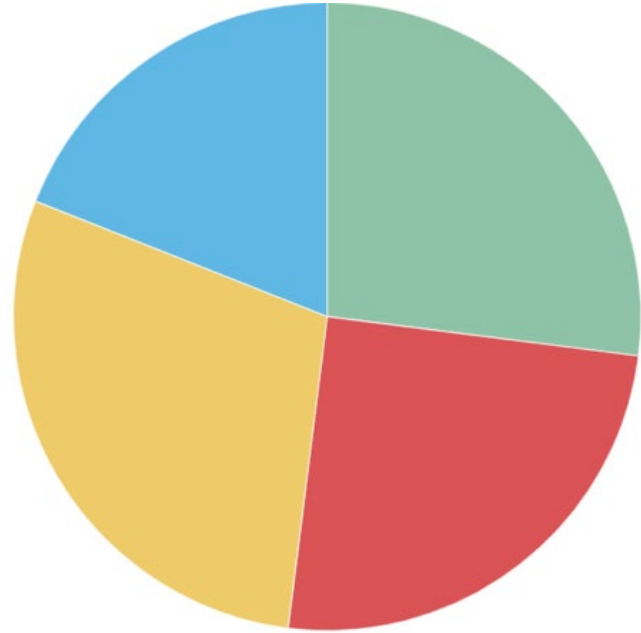
[Chart types: Choosing the right chart or map](#)

[Financial Times' guide to graph options](#)

[A primer on table design](#)

[When to use pie charts](#)

Lesson # 1



Speaking of choices, the colors you choose for visualizations also make a difference.

Helpful Links:

[Datawrapper: How to pick more beautiful colors](#)

[Datawrapper: What to consider when choosing colors for data viz](#)

[Nightingale: Your brand colors don't work for data viz](#)

Lesson # 1

Broaden your understanding of colors



NOT IDEAL



BETTER

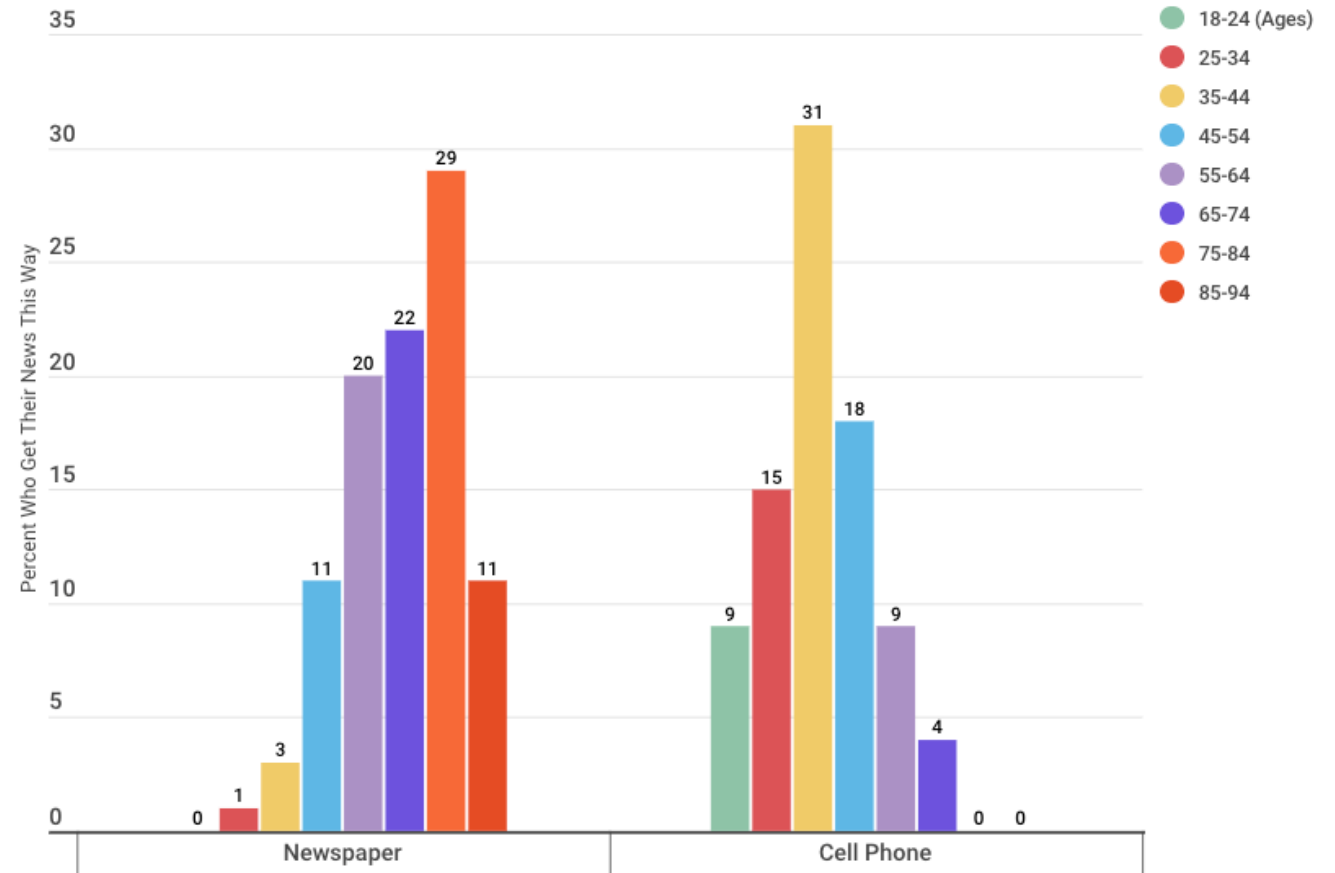


Lesson # 2

**When creating a chart, simplify, simplify –
and then simplify some more...**

Any ideas what we can do to simplify this chart?

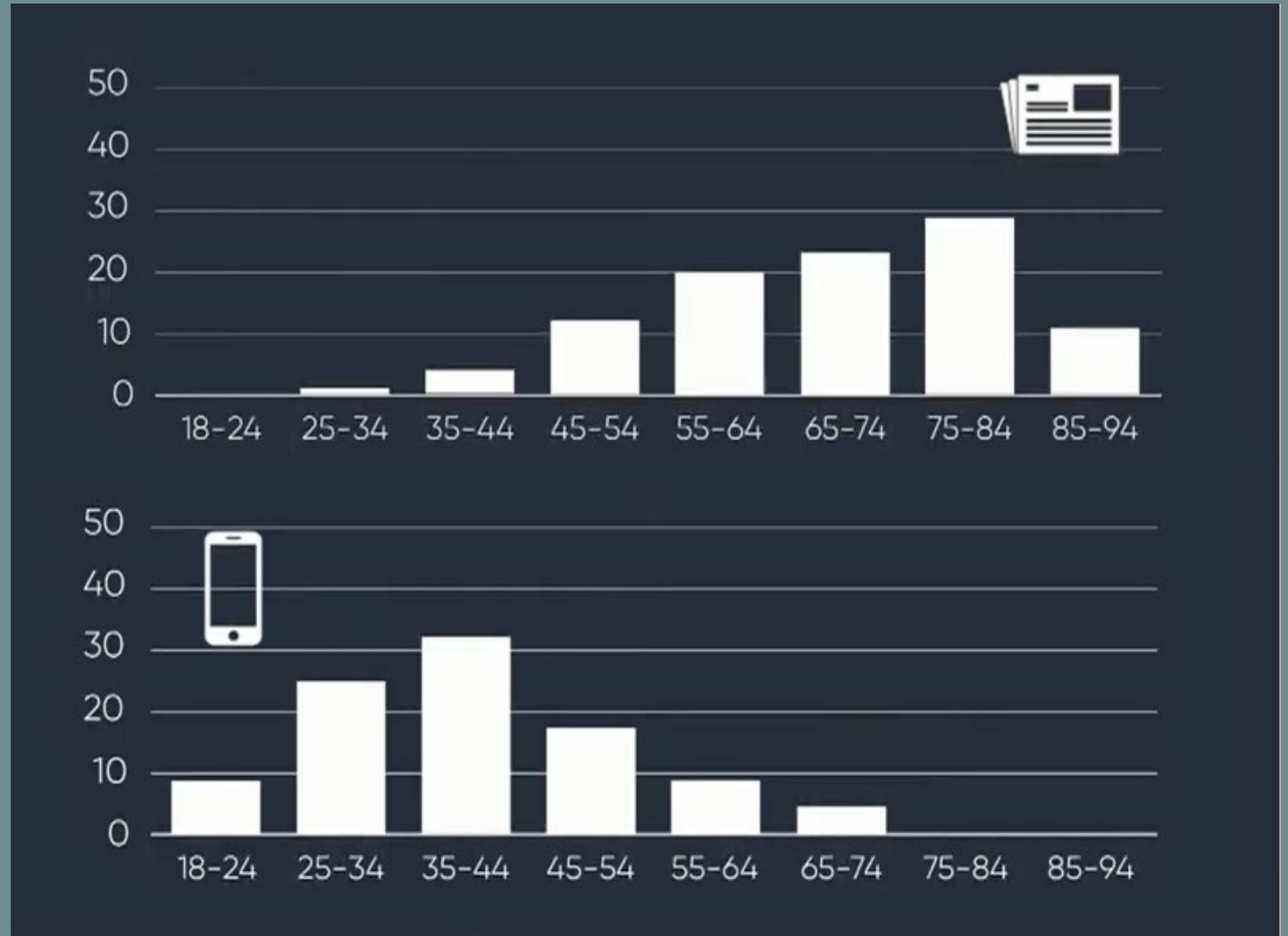
How People Get News, by Age (Comparison Between Newspaper and Phone)



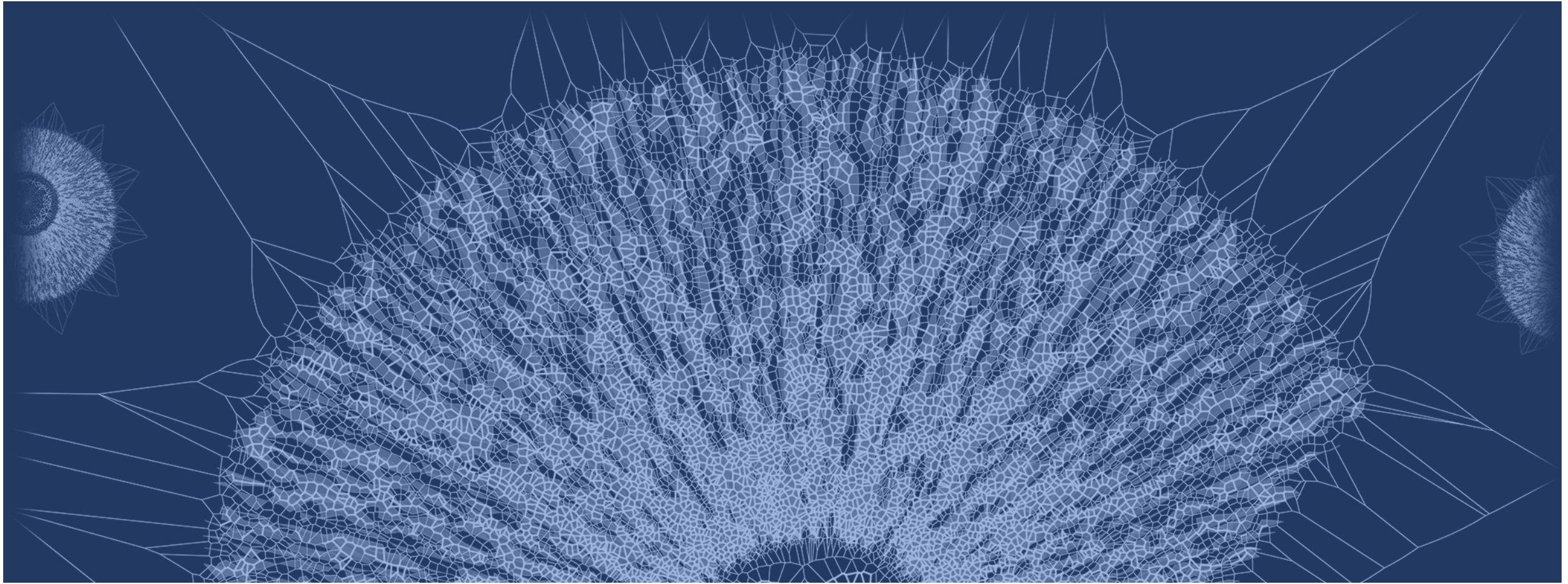
Lesson # 2

The simplest chart I've seen...

No bells and whistles (or for that matter, words), but it gets the point across.



Lesson # 2

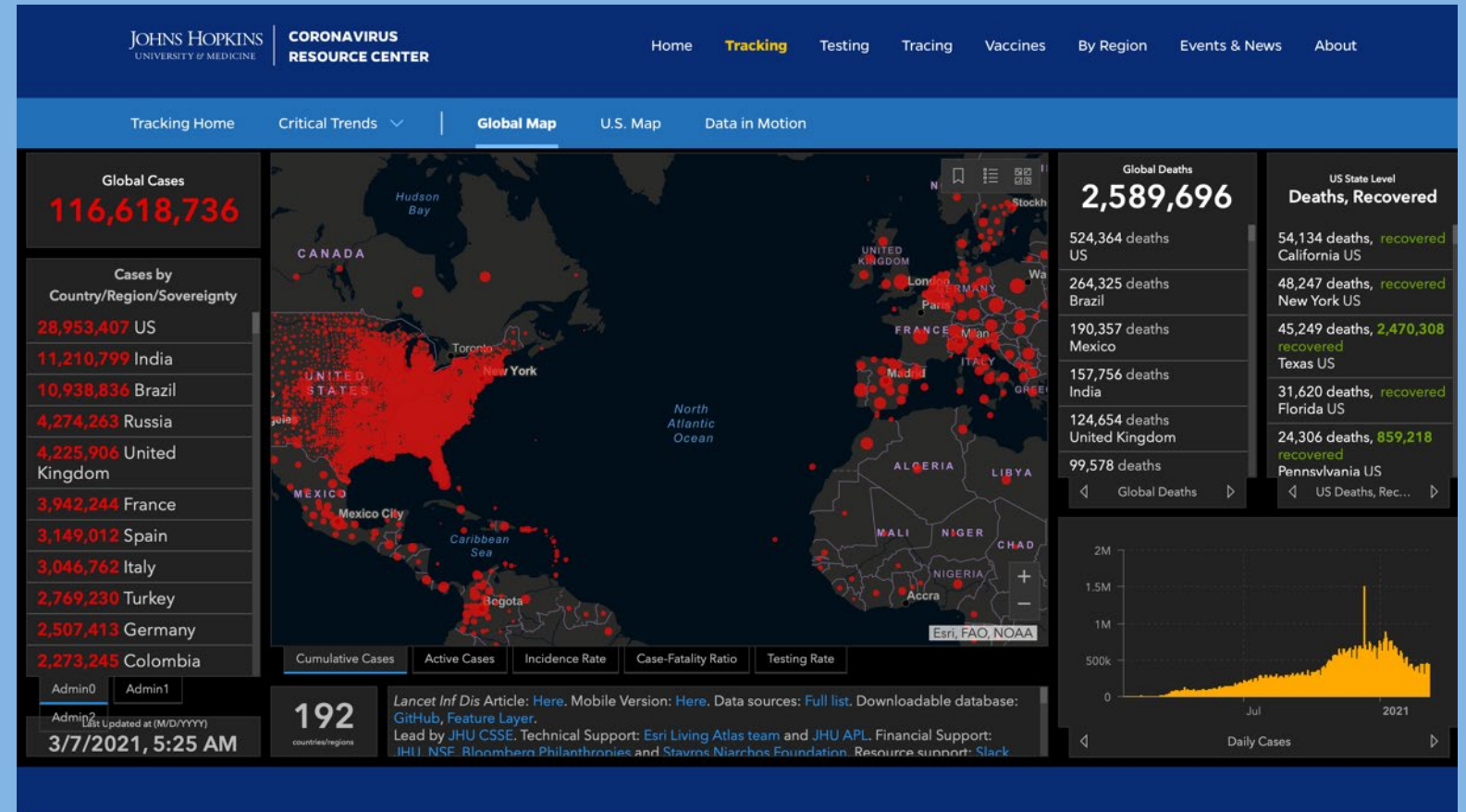


**Lessons Learned:
Data Storytelling**

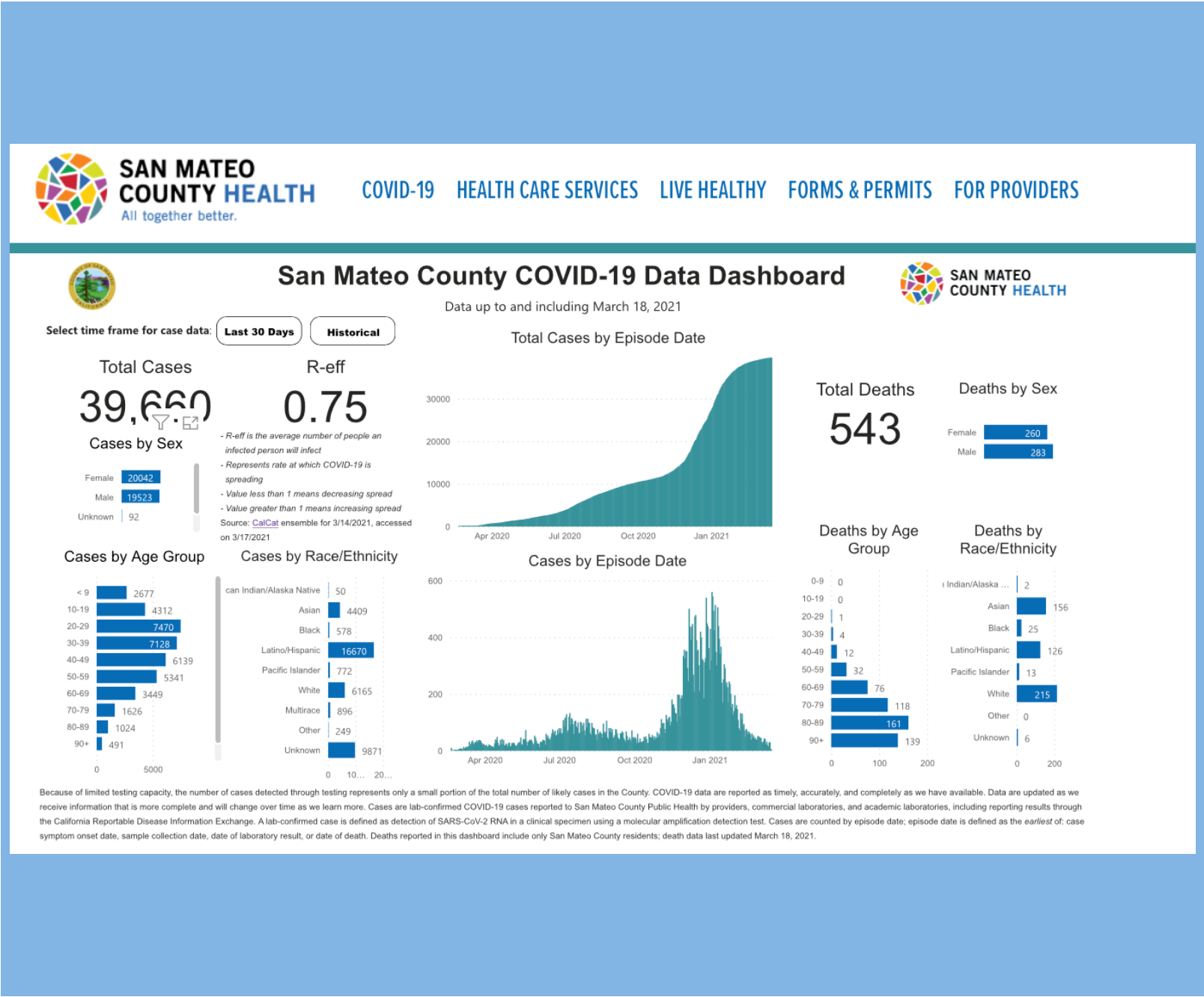


Lesson # 3
Leverage Other Display Formats
Besides Dashboards

COVID-19 has made all of us very familiar with viewing data through dashboards.



With dashboards, it's all about the graphs.



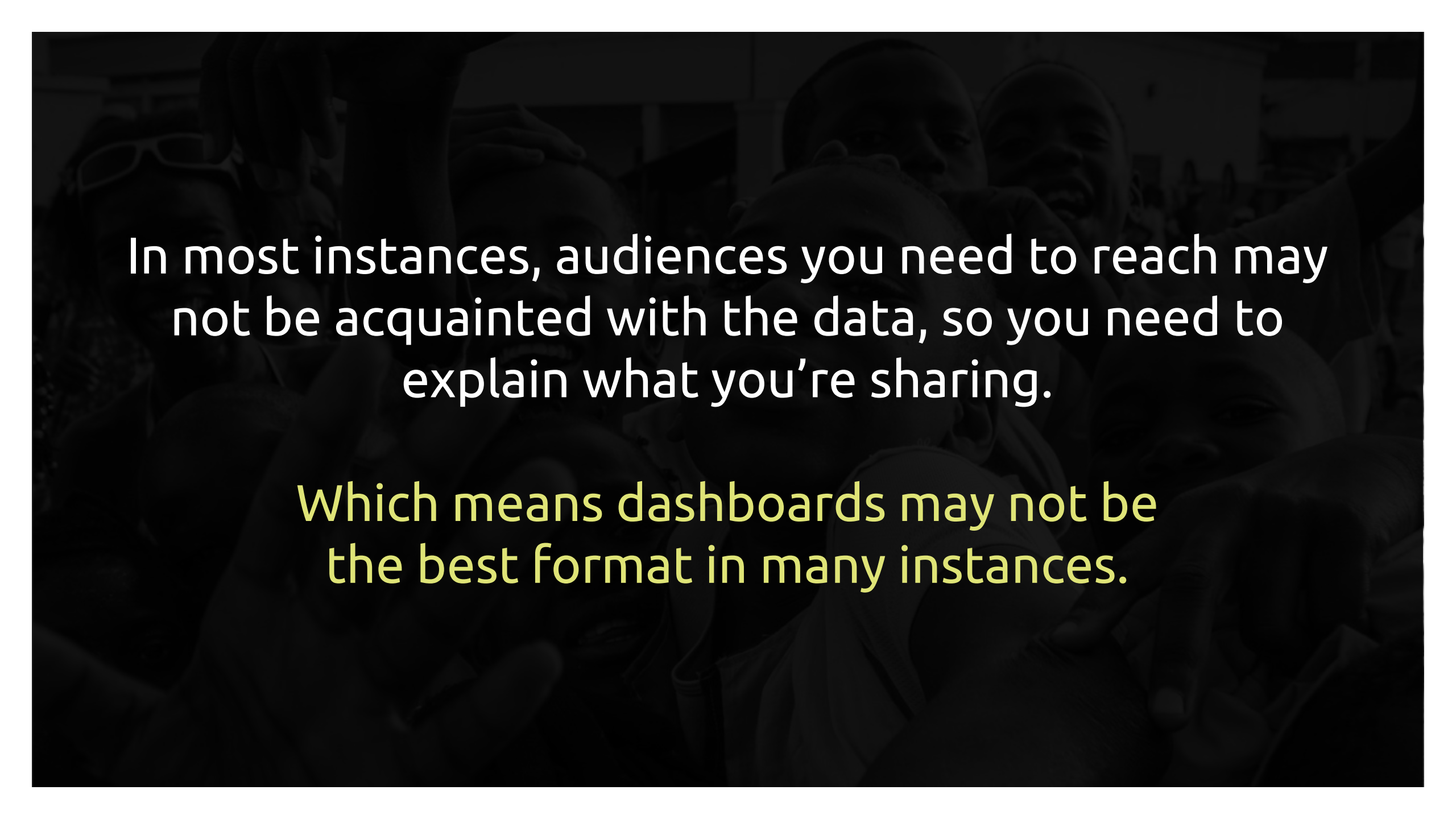


Given the pervasiveness of COVID-19, we all quickly became familiar with its data terminology.

So dashboards work fine for communicating about COVID.



Dashboards, however, don't typically leave much room for context and explanation.



In most instances, audiences you need to reach may not be acquainted with the data, so you need to explain what you're sharing.

Which means dashboards may not be the best format in many instances.



There is another display format to consider:

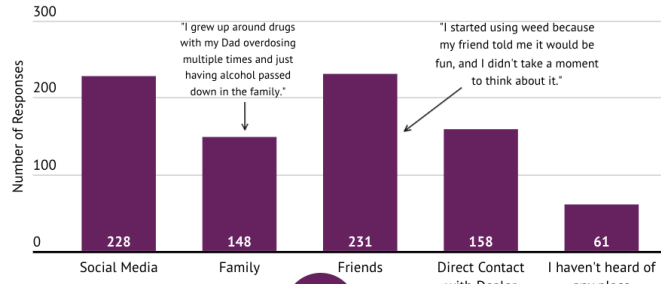
Data Stories

Findings from Survey of Local Teens



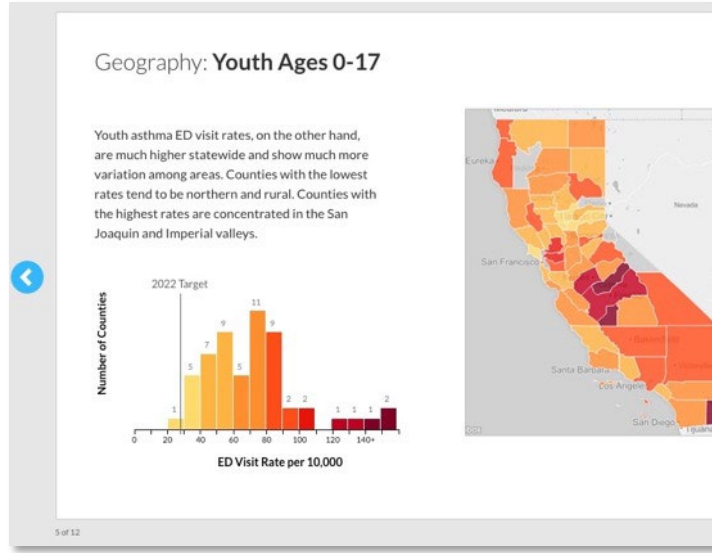
#1

Where have you heard people obtain substances from?



#2

Fact Sheet Handout



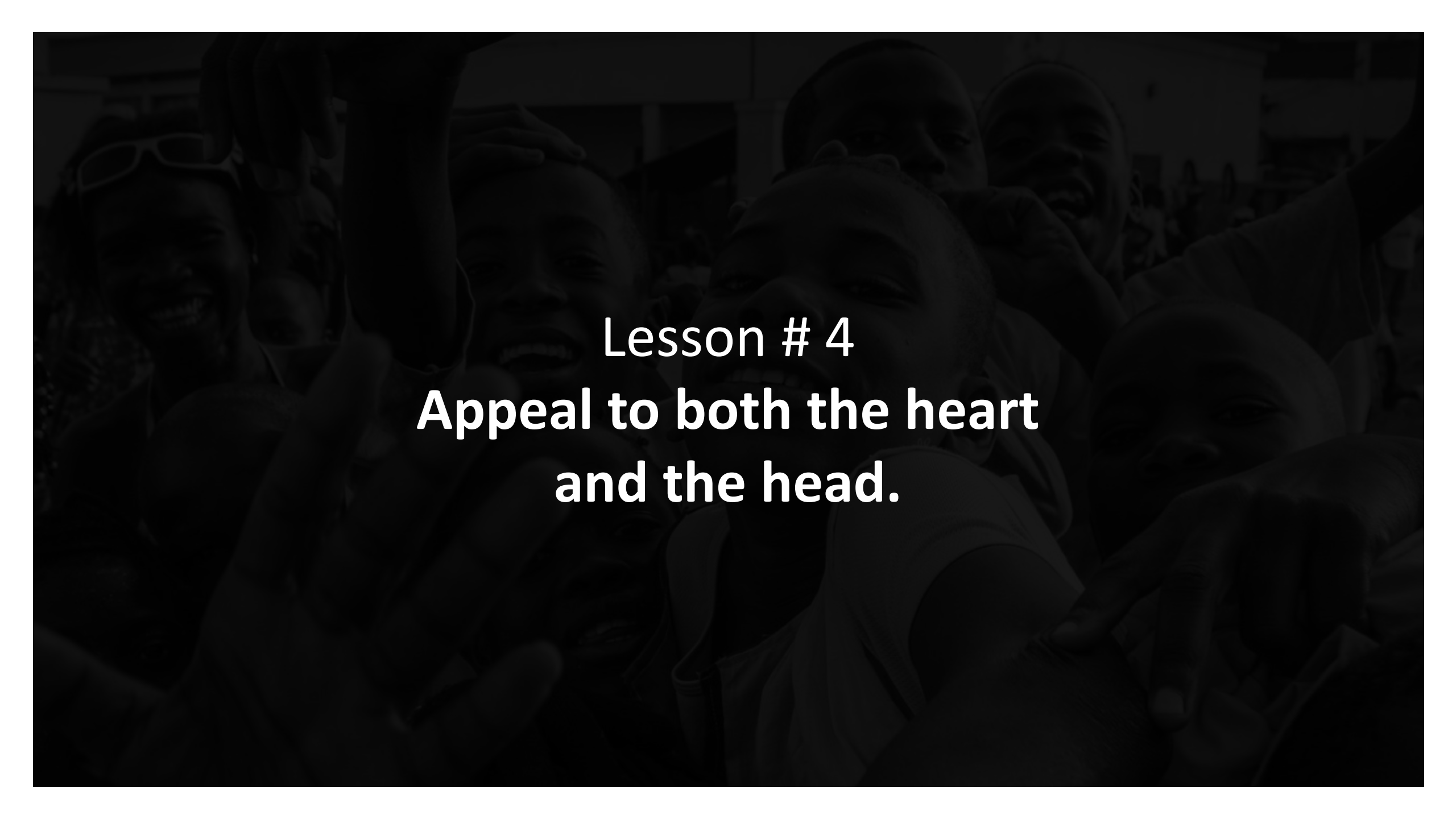
Slideshow



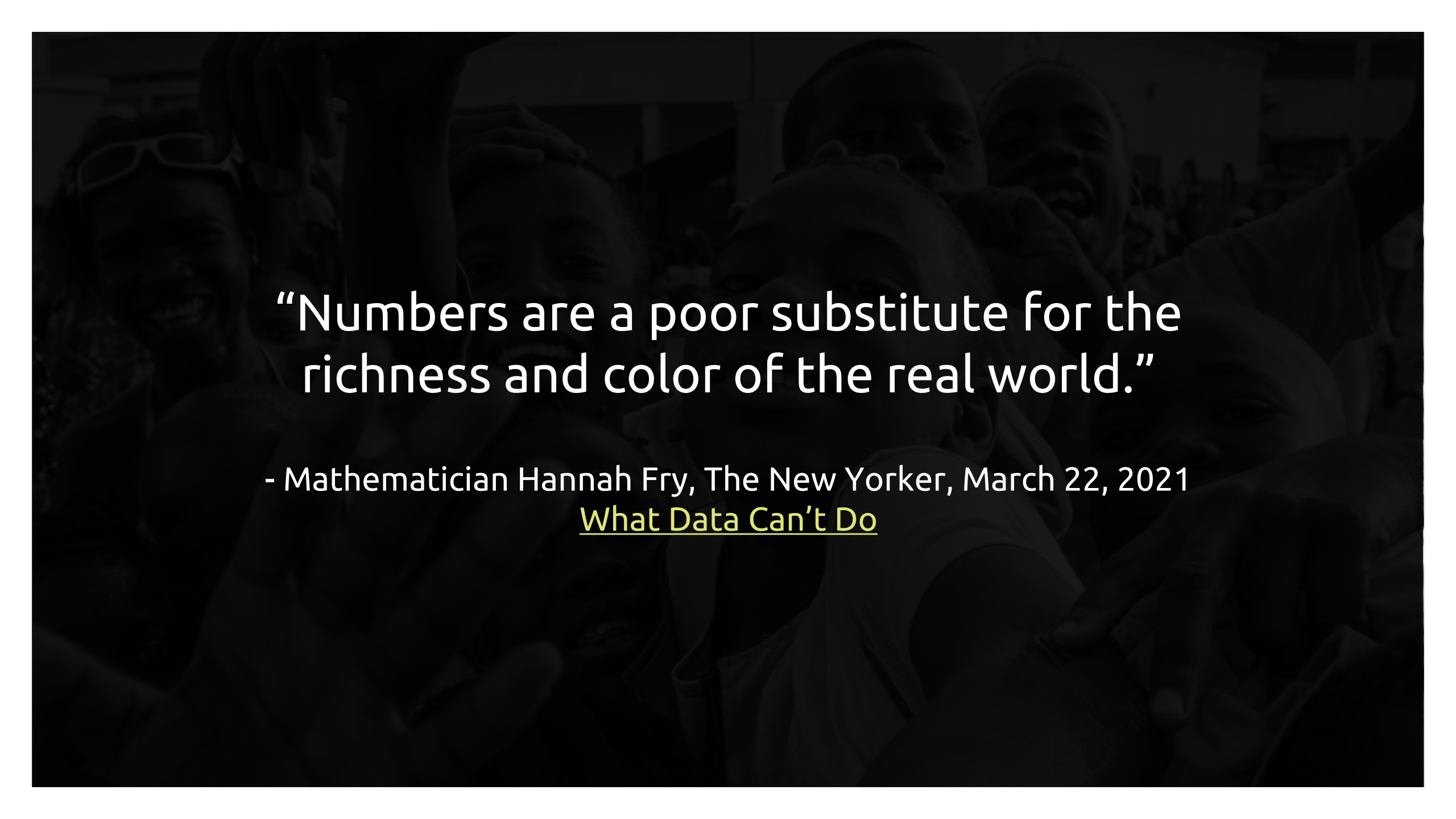
Infographic

How Can We Display Data?

There are numerous data storytelling formats...

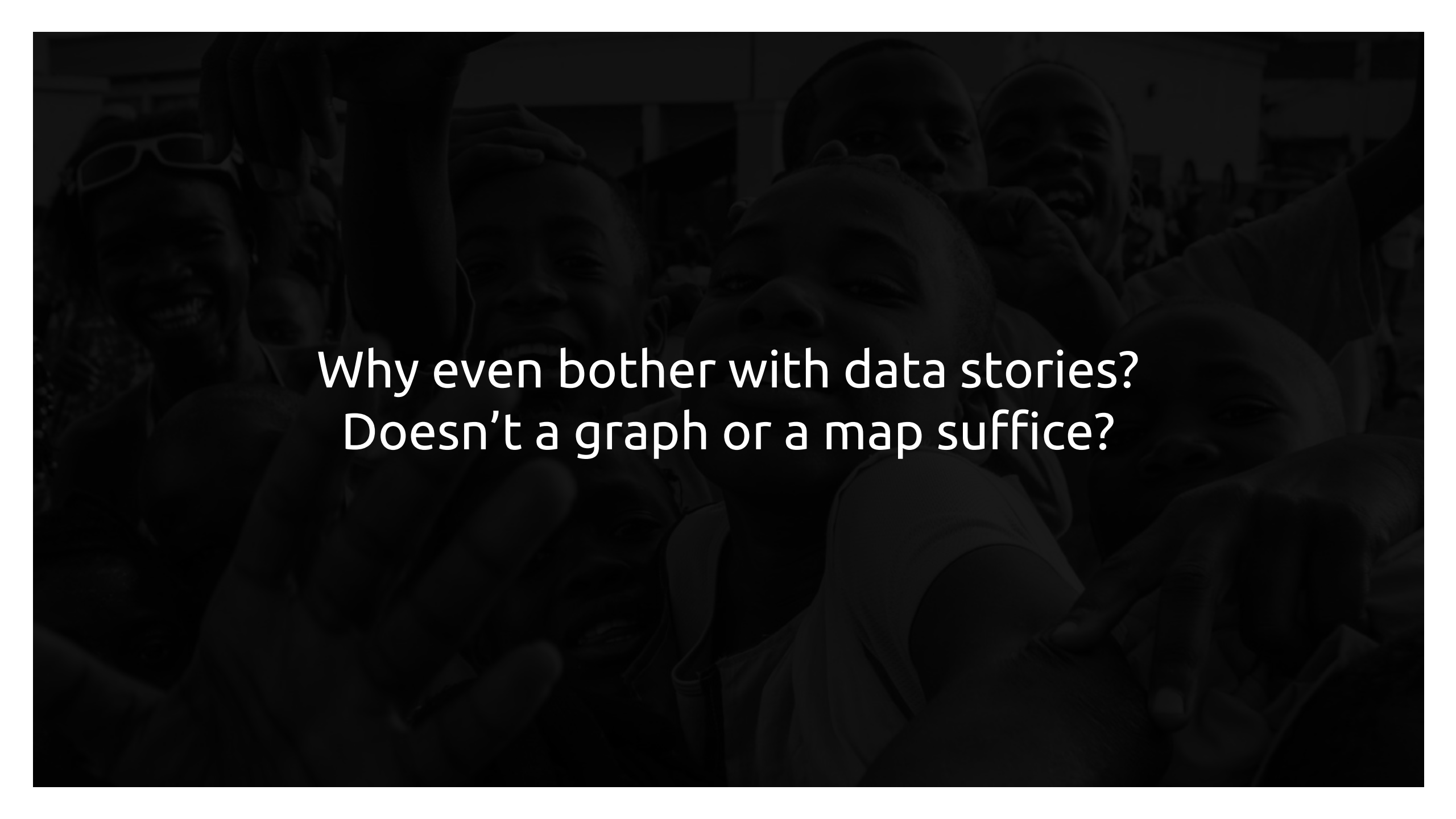


Lesson # 4
Appeal to both the heart
and the head.

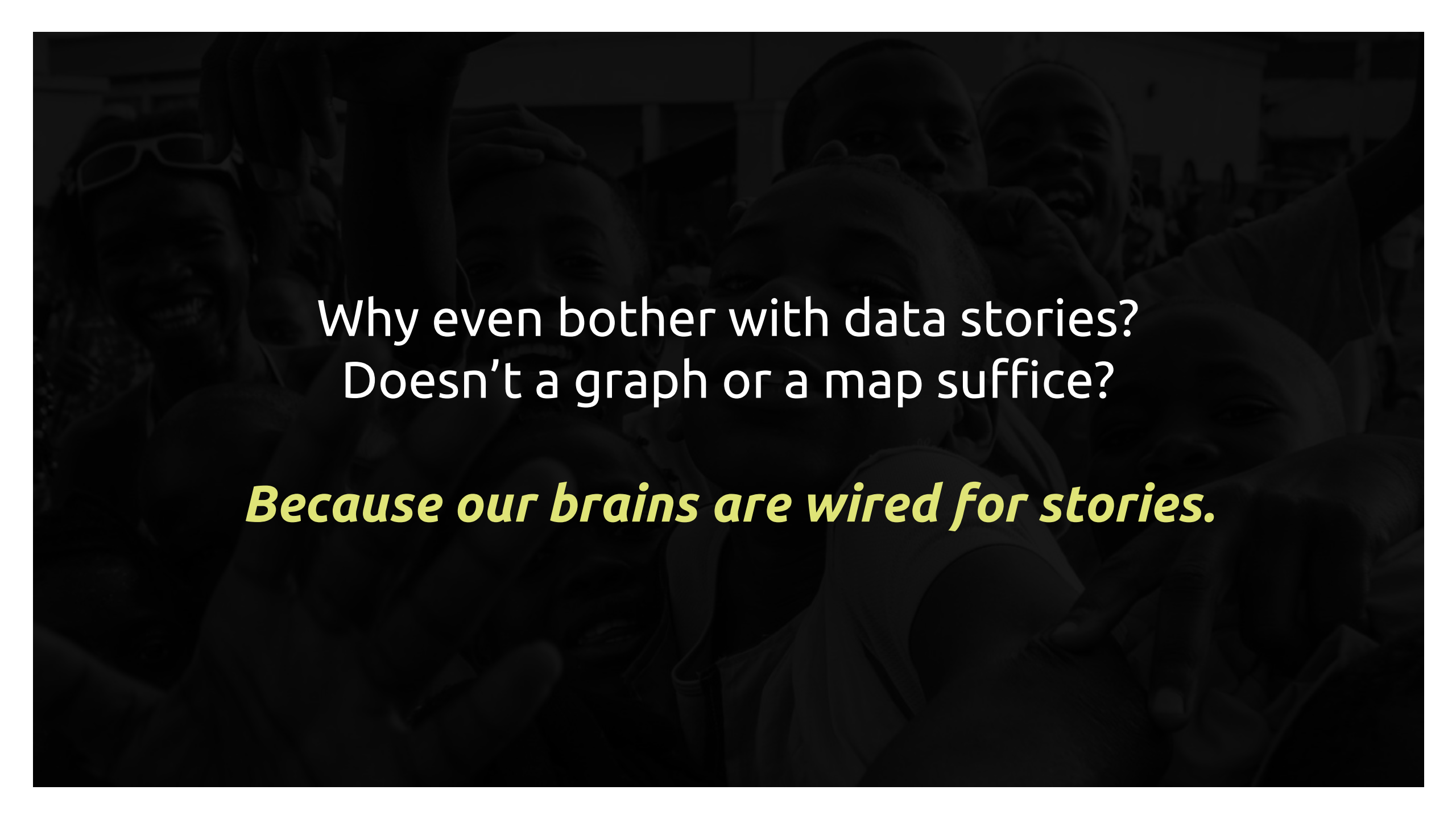


“Numbers are a poor substitute for the richness and color of the real world.”

- Mathematician Hannah Fry, The New Yorker, March 22, 2021
[What Data Can't Do](#)



Why even bother with data stories?
Doesn't a graph or a map suffice?



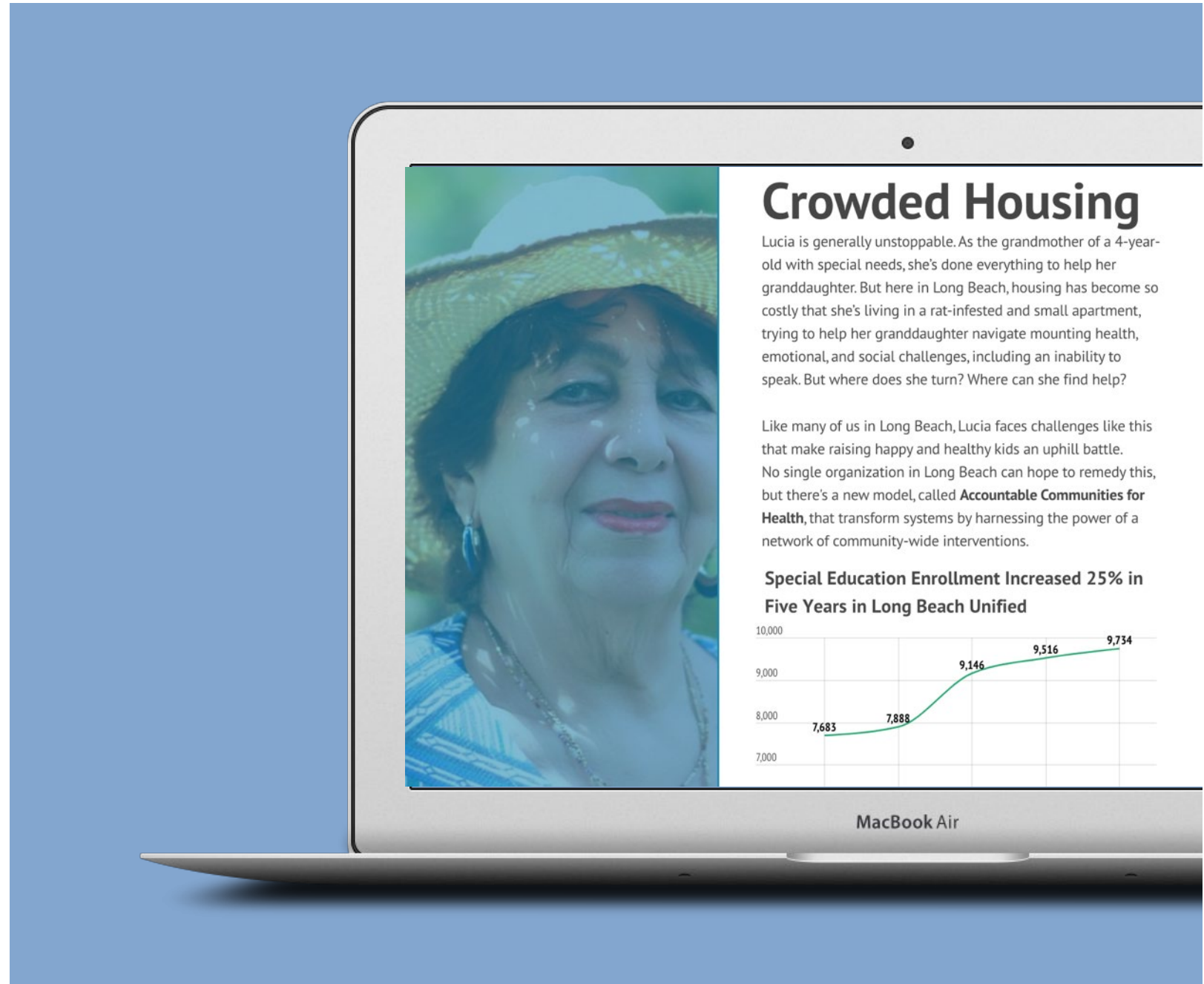
Why even bother with data stories?
Doesn't a graph or a map suffice?

Because our brains are wired for stories.

Poignant quotes and personal stories to draw the reader in.

Example

Lesson # 4



The image shows a laptop screen with a news article. On the left side of the screen is a portrait of Lucia, an elderly woman wearing a straw hat and a blue patterned top. To the right of the portrait is the article text. The article title is "Crowded Housing". The text describes Lucia's situation in Long Beach, where housing is expensive and she is living in a small, rat-infested apartment. It mentions her role as a grandmother and the challenges she faces. Below the text is a line graph titled "Special Education Enrollment Increased 25% in Five Years in Long Beach Unified". The graph shows enrollment numbers for four years: 7,683, 7,888, 9,146, and 9,734. The y-axis ranges from 7,000 to 10,000. The x-axis represents years, though no specific years are labeled. The laptop is a MacBook Air.

Crowded Housing

Lucia is generally unstoppable. As the grandmother of a 4-year-old with special needs, she's done everything to help her granddaughter. But here in Long Beach, housing has become so costly that she's living in a rat-infested and small apartment, trying to help her granddaughter navigate mounting health, emotional, and social challenges, including an inability to speak. But where does she turn? Where can she find help?

Like many of us in Long Beach, Lucia faces challenges like this that make raising happy and healthy kids an uphill battle. No single organization in Long Beach can hope to remedy this, but there's a new model, called **Accountable Communities for Health**, that transform systems by harnessing the power of a network of community-wide interventions.

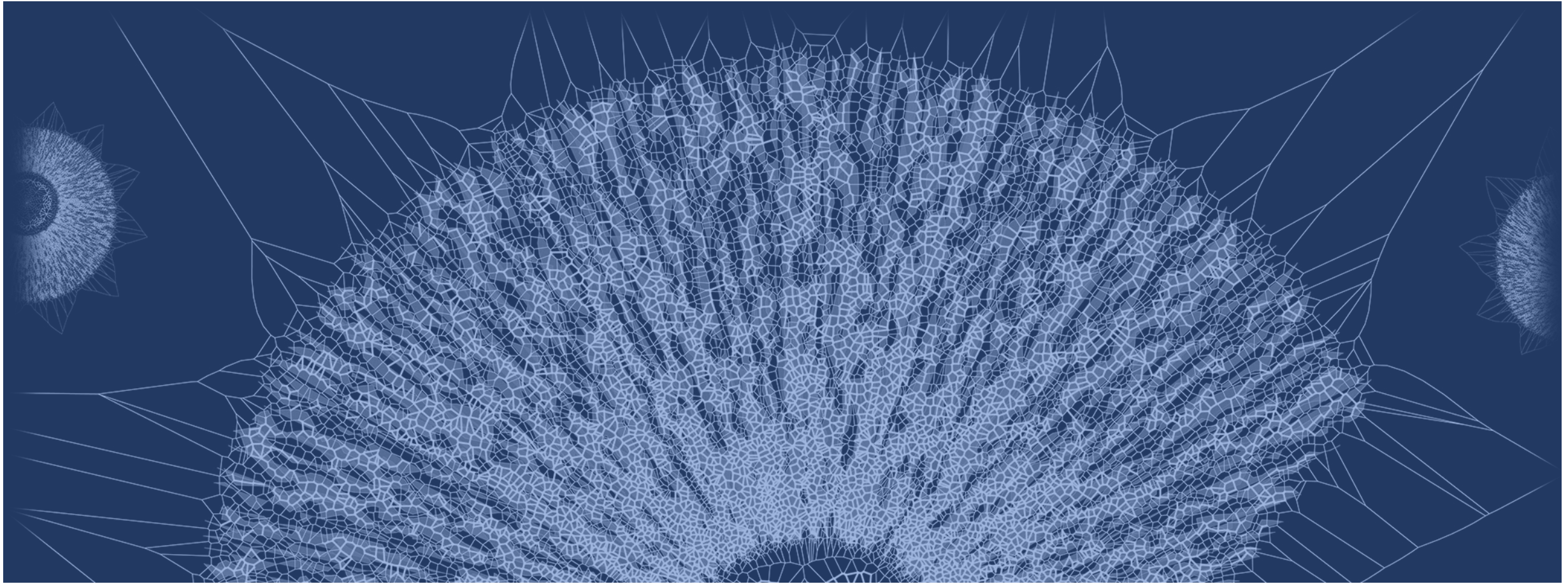
Special Education Enrollment Increased 25% in Five Years in Long Beach Unified

Year	Enrollment
Year 1	7,683
Year 2	7,888
Year 3	9,146
Year 4	9,734

Introduce individuals to help you narrate your data findings.



Lesson # 4



**Lessons Learned:
Process Matters**

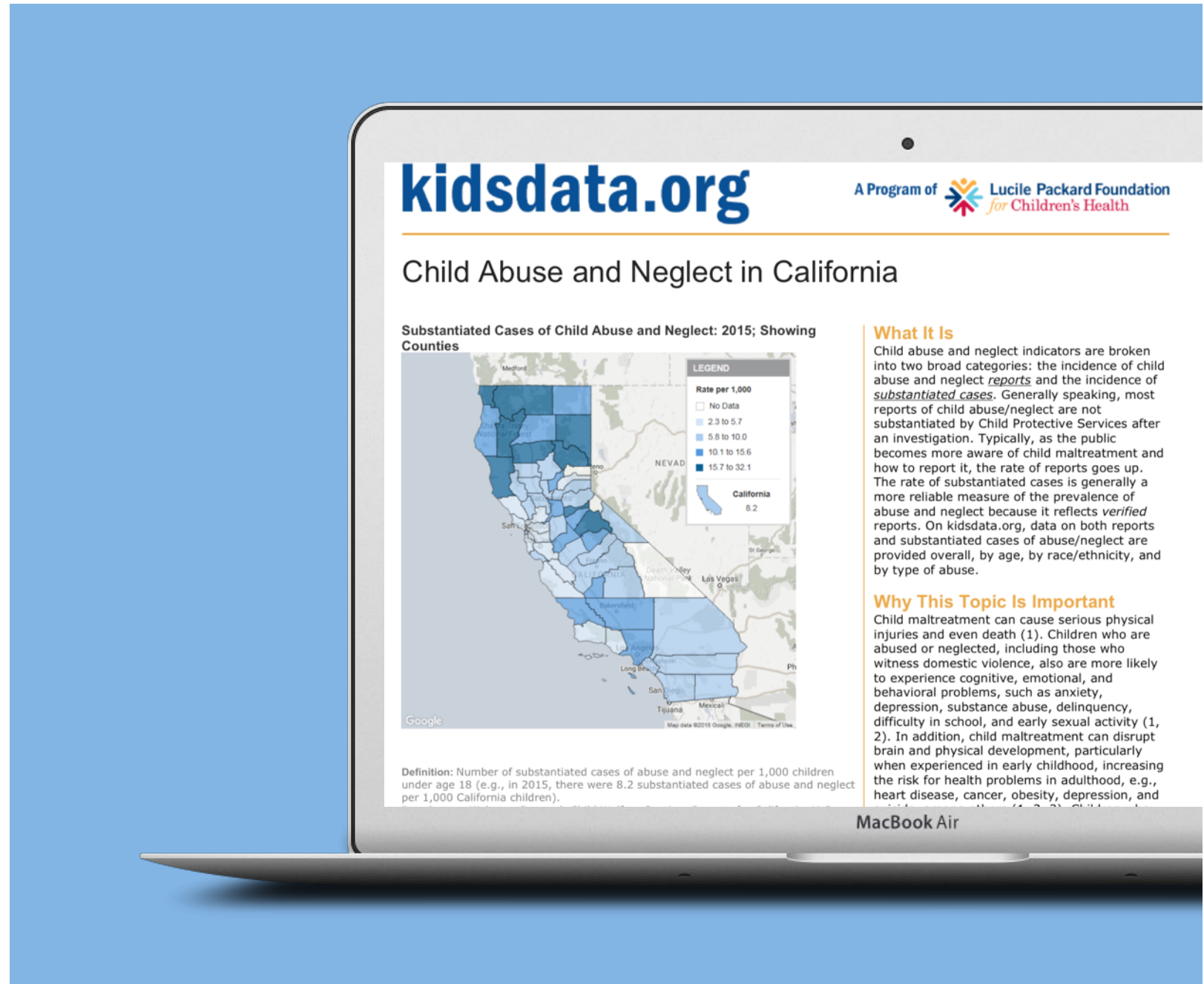


Lesson # 5
Always talk to your end-users

Talking to your constituents – early and often – is the best way to ensure that you build data tools that are useful and used.

Example

Lesson # 5





Lesson #6

Don't start with the complete story.

JAMA | Original Investigation
Effect of Opioid vs Nonopioid Medications on Pain-Related Function in Patients With Chronic Back Pain or Hip or Knee Osteoarthritis Pain
The SPACE Randomized Clinical Trial

Erin E. Krebs, MD, MPH, Amy Gravelly, MA, Sean Nugent, BA, Agnes C. Jensen, MPH, Beth DeRonne, PharmD, Elzolt Kurt Kroenke, MD, Matthew J. Barr, Siamak Nooraloochi, PhD

IMPORTANCE Limited evidence is available regarding long-term outcomes of opioids compared with nonopioid medications for chronic pain.

OBJECTIVE **function:** Research | Original Investigation

DESIGN **outcome:** June 20 had mo Of 265;

INTERV **to treat:** present to the first for the anti-inf treatme

MAIN O **intensi** **or pain:** outcom

RESULTS **(97.5%)** **12 mont** **3.3 for t** **significi**

BPI score **(95% CI** **commo** **sympto** **(differe**

CONCLU **nonopi** **support** **osteoar**

TRIAL R **JAMA. 2018**

Opioid vs Nonopioid Medications on Pain-Related Function | Original Investigation | Research

Table 2. Patient-Reported Primary and Secondary Outcomes Among Patients With Chronic Back Pain or Hip or Knee Osteoarthritis Pain Randomized to Opioid or Nonopioid Medication

Outcome	Opioid Group, Mean (SD) (n = 119)	Nonopioid Group, Mean (SD) (n = 119)	Between-Group Difference (95% CI) ^a	Overall P Value ^b
Pain-Related Function (Primary Outcome)				
BPI interference scale (range, 0-10; higher score = worse) ^c				.58
Baseline	5.4 (1.8)	5.5 (2.0)	-0.1 (-0.6 to 0.4)	
1 mo	3.7 (2.1)	3.7 (2.2)	0.0 (-0.6 to 0.6)	
3 mo	3.4 (2.1)	3.6 (2.4)	-0.2 (-0.8 to 0.4)	
6 mo	3.6 (2.2)	3.3 (2.4)	0.4 (-0.2 to 1.0)	
12 mo	3.4 (2.5)	3.3 (2.6)	0.1 (-0.5 to 0.7)	
Intensity (Secondary Outcome)				
Severity scale (range, 0-10; higher score = worse) ^c				.03
Baseline	5.4 (1.5)	5.4 (2.2)	0.0 (-0.4 to 0.3)	
1 mo	4.3 (1.8)	4.0 (1.7)	0.3 (-0.2 to 0.7)	
3 mo	4.1 (1.8)	4.1 (1.9)	0.0 (-0.5 to 0.5)	
6 mo	4.2 (1.7)	3.6 (1.7)	0.7 (0.2 to 1.2)	
12 mo	4.0 (2.0)	3.5 (1.9)	0.5 (0.0 to 1.0)	

Table 3. Adverse Outcomes and Measures of Potential Harm Among Patients With Chronic Back Pain or Hip or Knee Osteoarthritis Pain Randomized to Opioid or Nonopioid Medication

Adverse Outcome	Opioid Group	Nonopioid Group	Between-Group Difference (95% CI) ^a	Overall P Value ^b
Primary Outcome				
Medication-related symptoms (range 0-10; higher score = worse)				.23
Baseline	1.7 (1.9)	1.7 (1.9)	0.0 (-0.5 to 0.5)	
1 mo	2.0 (2.0)	1.7 (1.9)	0.3 (-0.2 to 0.7)	
3 mo	2.0 (2.0)	1.7 (1.9)	0.3 (-0.2 to 0.7)	
6 mo	2.0 (2.0)	1.7 (1.9)	0.3 (-0.2 to 0.7)	
12 mo	2.0 (2.0)	1.7 (1.9)	0.3 (-0.2 to 0.7)	
Secondary Outcome				
Medication-related symptoms (range 0-10; higher score = worse)				.23
Baseline	1.7 (1.9)	1.7 (1.9)	0.0 (-0.5 to 0.5)	
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RESULTS (97.5%) 12 months 3.3 for t significi

CONCLU nonopi support osteoar

TRIAL R JAMA. 2018

What works better for long-term pain?

Opioids or Non-Opioids?

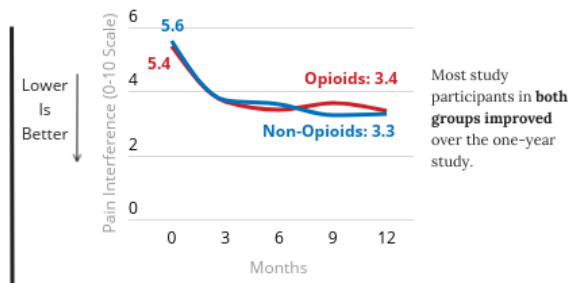
What We Already Knew: We knew that opioids were more likely to cause serious harms such as injuries, breathing trouble, addiction, and even death.

What We Didn't Know: Patients and doctors didn't know if opioids worked better for long-term pain than non-opioid pain medications.

What Was Studied

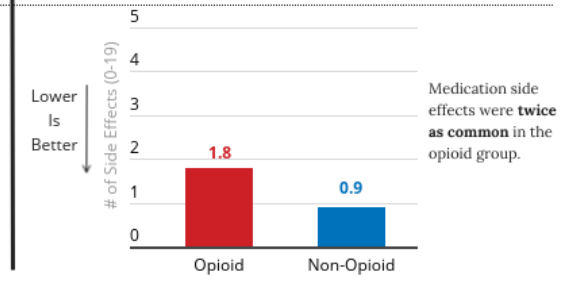
VA doctors and researchers recruited 240 VA patients with long-term back, hip, or knee pain. One group received opioids, such as morphine and oxycodone. The other group received non-opioids, such as lidocaine cream, acetaminophen, and naproxen. After one year, this is what they found:

How much does pain interfere with your...
 general activity, mood, walking ability, normal work, relations with other persons, sleep, and enjoyment of life?



Most study participants in both groups improved over the one-year study.

Patient-reported, medication side effects

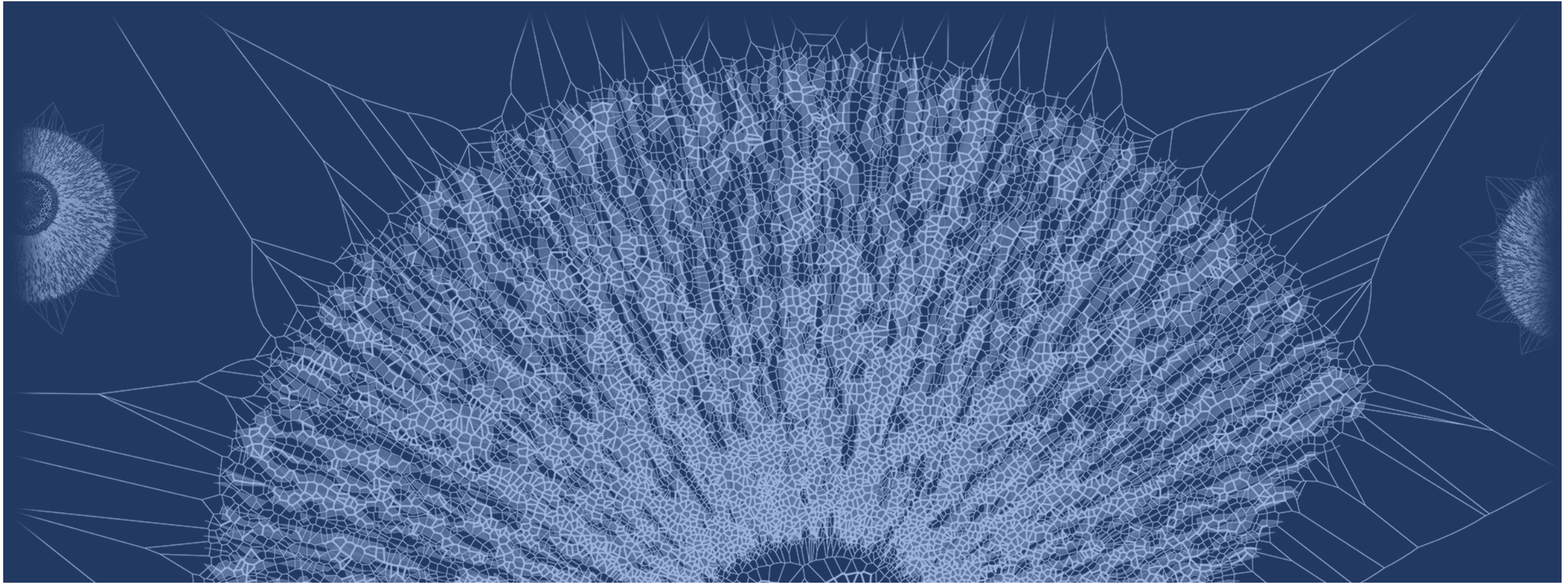


Medication side effects were twice as common in the opioid group.

VA doctors and researchers concluded that opioids did not work better than non-opioids for long-term pain

See the full study from the *Journal of the American Medical Association*:
<https://jamanetwork.com/journals/jama/fullarticle/2673971>



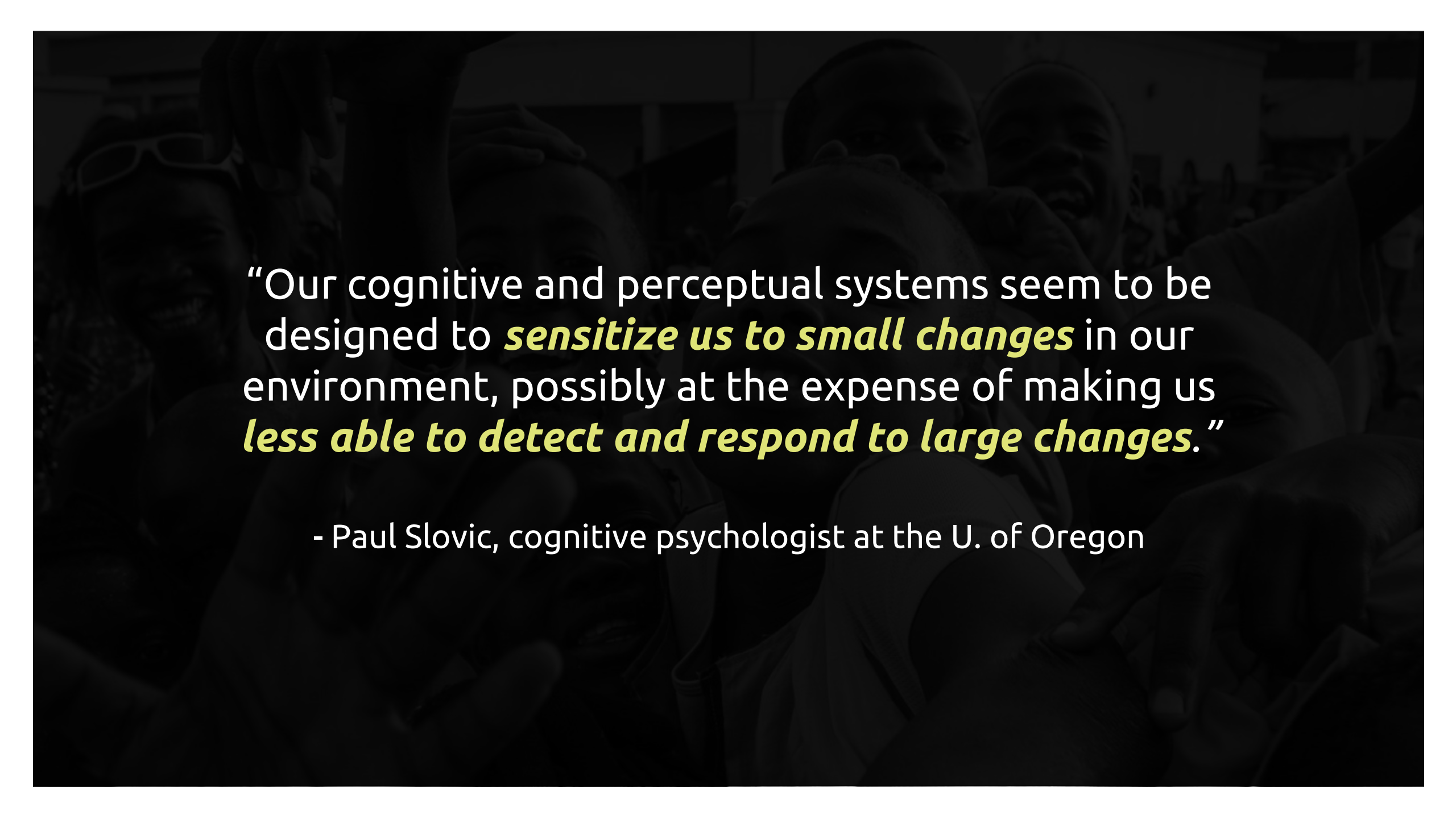


**Lessons Learned:
Make Data Relatable**



Lesson # 7

**Be careful with large numbers. They
can be abstractions.**

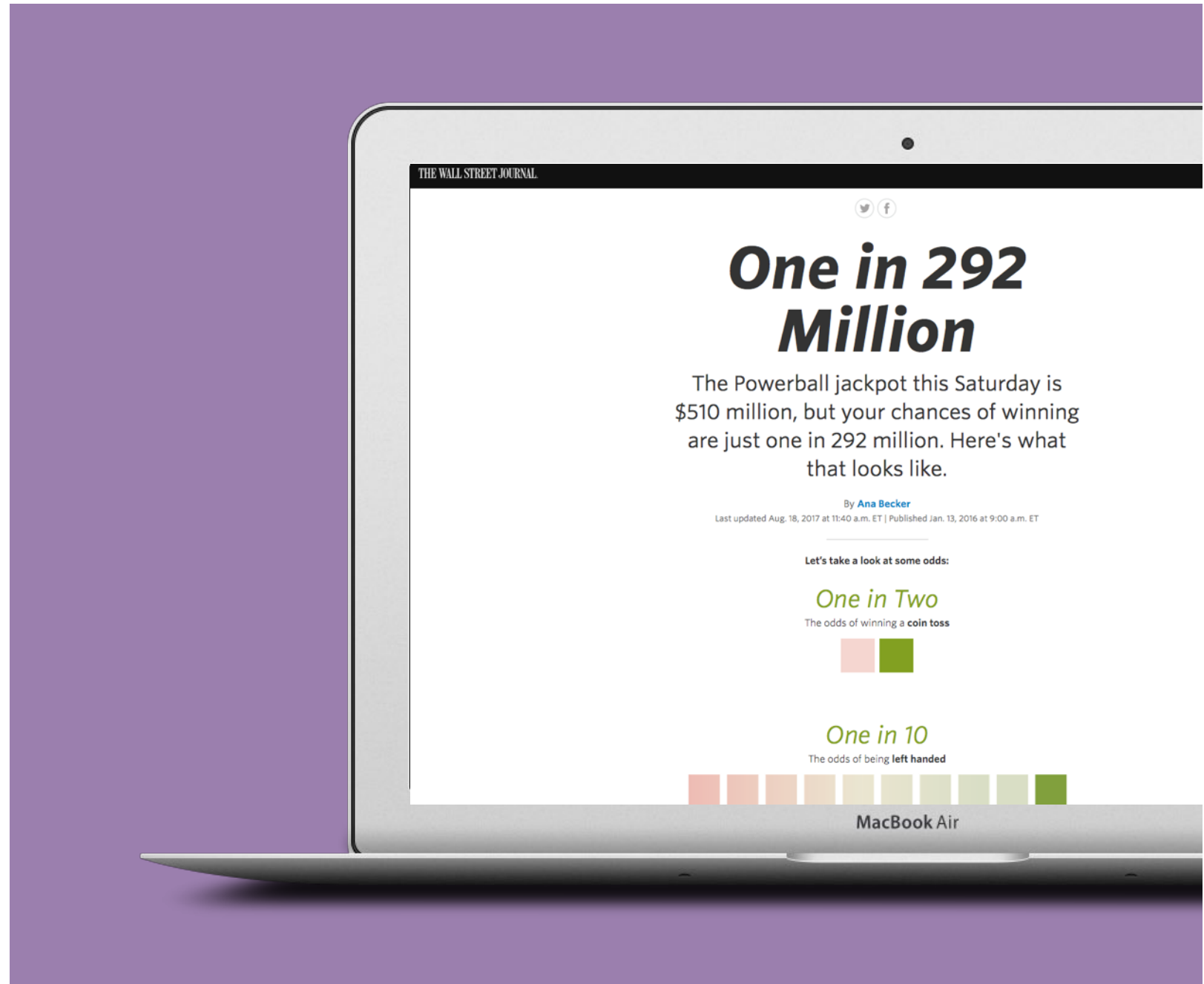


“Our cognitive and perceptual systems seem to be designed to ***sensitize us to small changes*** in our environment, possibly at the expense of making us ***less able to detect and respond to large changes.***”

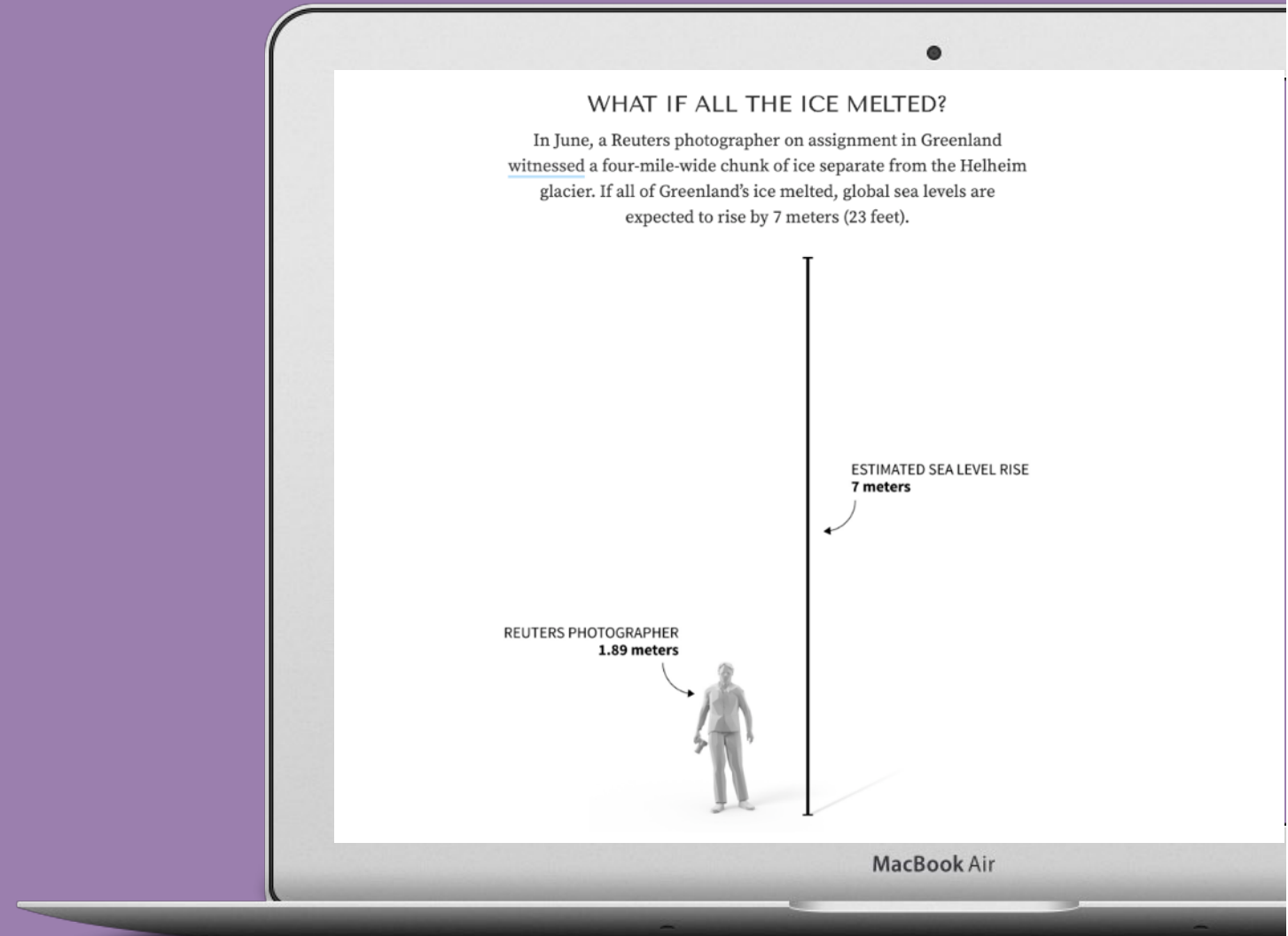
- Paul Slovic, cognitive psychologist at the U. of Oregon

It's hard for humans to appreciate numbers that are larger than what we experience in our day-to-day lives.

Lesson # 7



To make large numbers relatable, you can compare data to known objects.

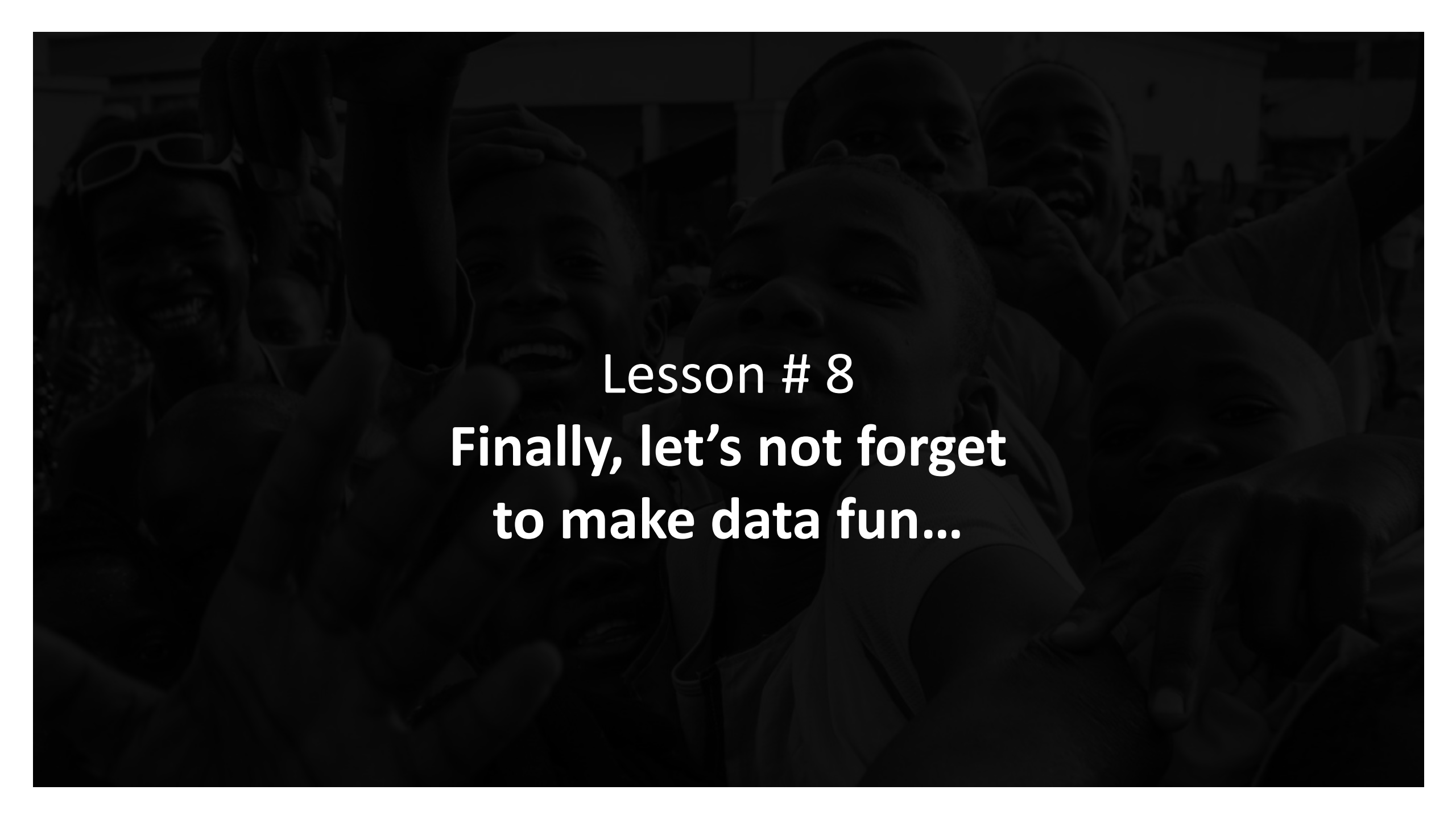


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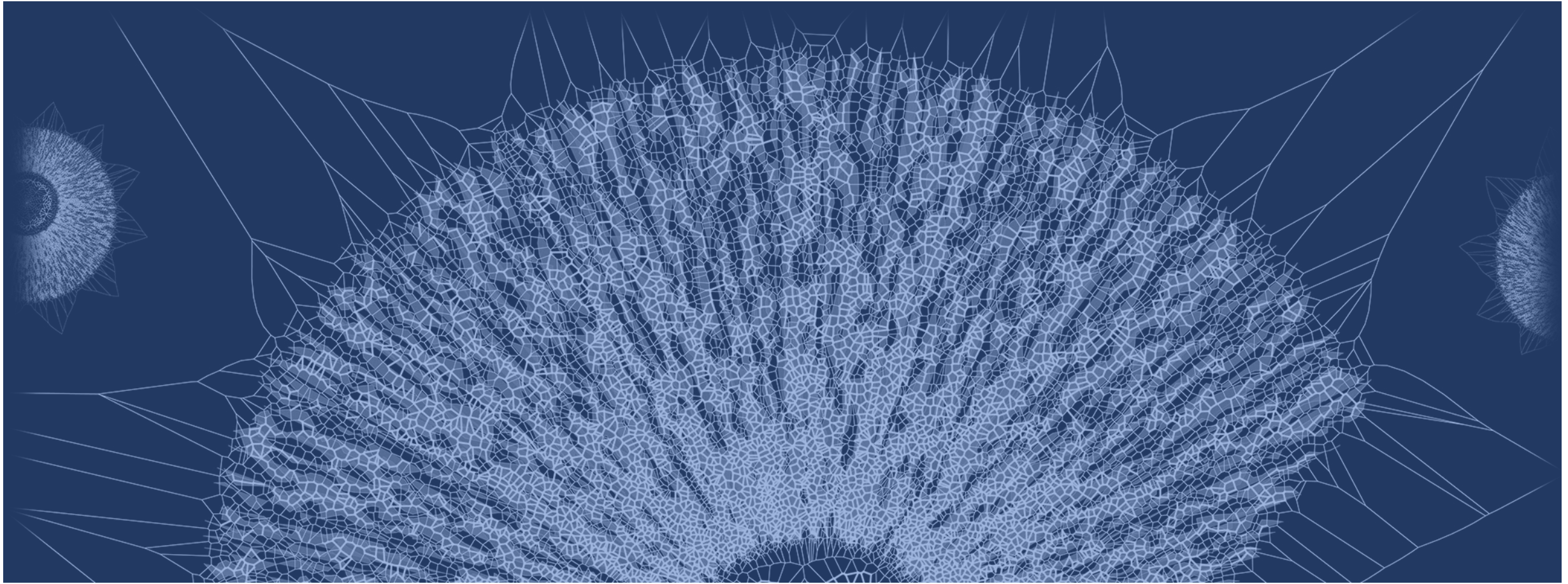
Lesson # 8
**Finally, let's not forget
to make data fun...**

Create intellectual exercises from data, in order to engage your users and encourage them to share what they're learning.

Example

Lesson # 8

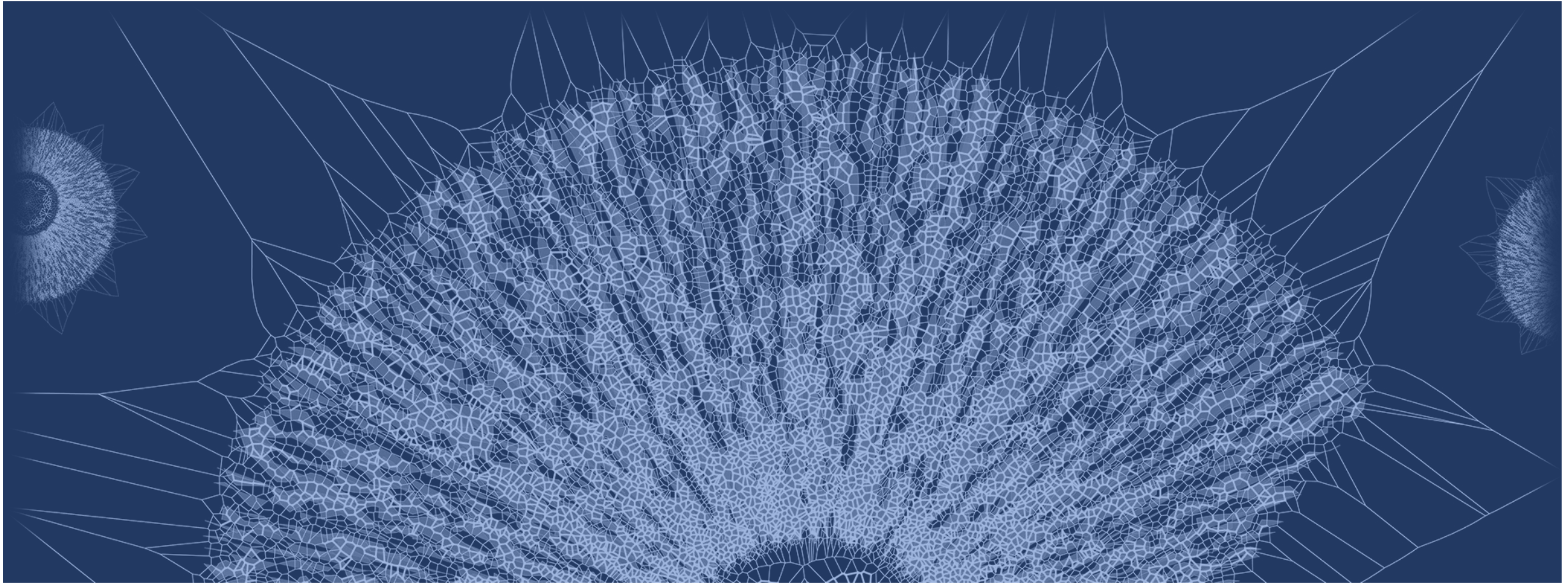




Data Tools

Free Tools you can use to create maps,
graphs, and stories
*(in addition to Excel, Google Sheets, PowerBI or
Tableau):*

- ☑ **Infogram** (see tutorial)
- ☑ **Datawrapper** (see tutorial)
- ☑ **Flourish** (see tutorial)



Practice Building a Data Story

Now it's your turn...

We'll break into groups to think through
a data story.

We'll supply the data.
You'll come up with the story.

Your Group's Goal

- Choose an audience/action
- Determine ways to visualize data
- Consider the content to include in a data story and a presentation format

Questions to Discuss:

- **For which of the above measures are the data most compelling? That is, what do you think is most important to share with others (choose one or two measures)?**
- Audience: What specific audience do you most need to reach with these data?
- Action: What do you need that audience to do with the information you're presenting?
- What kinds of graphs or maps would you use to summarize these data? In other words, how would you visualize the data you want to share?
- How would you bolster these data with a story?
- What format would work best for presenting this content to your audience?

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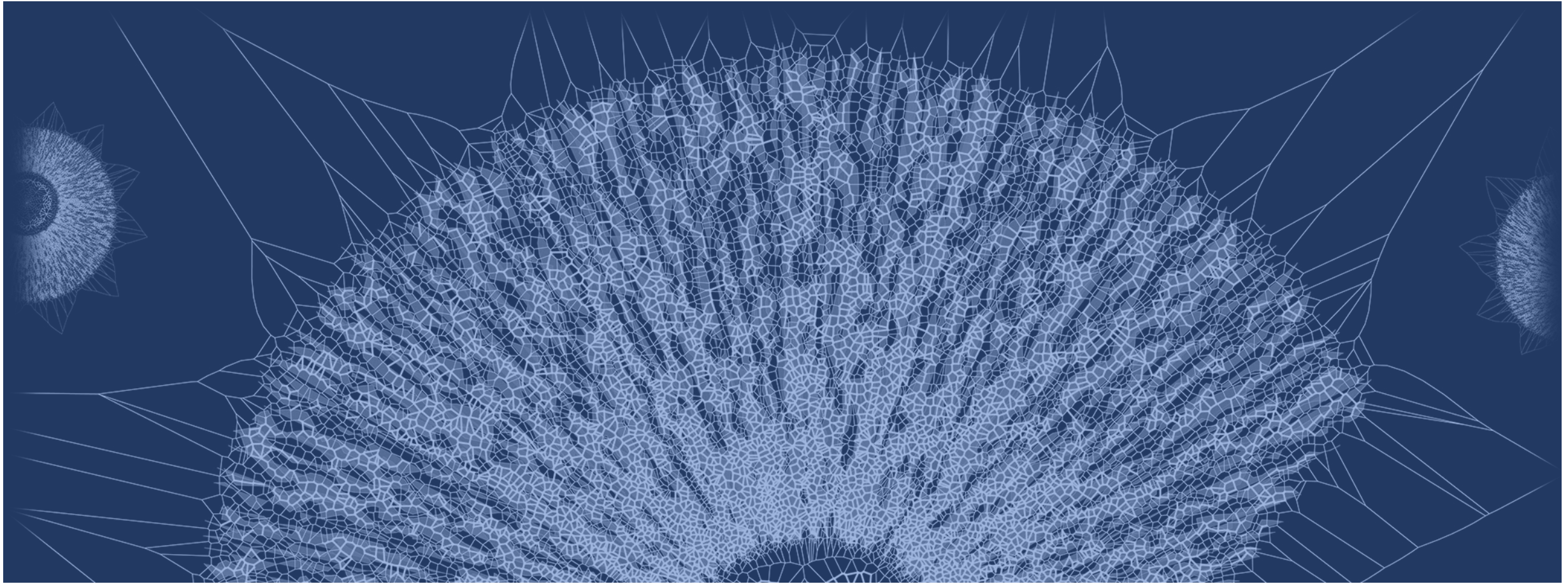
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Data Story Report Out

Let's see what you came up with...

Thank you.

andy@hillcrestadvisory.com
(if you have a question)

www.hillcrestadvisory.com
(more resources)